

CLAIMS

What is claimed is:

1. An on-line dispersion compensation device for a wavelength division optical transmission system, comprising:

two optical path selectors;

at least one chirped grating fiber unit; wherein

the chirped grating fiber unit is serially connected between the appropriate ports of the two optical path selectors;

the input port of one optical path selector is connected with input optical signal of the device, and the last stage output port of one optical path selector is connected with the input port of another optical path selector, the last stage output port of another optical path selector outputs the optical signal output of the device; and

the chirped grating fiber unit further is consisted of two connected chirped grating fibers with same wavelength band and set oppositely.

2. The device according to Claim 1, wherein the optical path selector is a circulator, and one chirped grating fiber unit is serially connected between the two circulators; wherein two ports of the chirped grating fiber unit is respectively connected with the second port of the two circulators, the first port of the first circulator is inputted the optical signal input of the device, the third port of the first circulator is connected with the first port of the second circulator, and the third port of the second circulator outputs the optical signal output of the device.

3. The device according to Claim 1, wherein the optical path selector is a 2*2 optical coupler, and two chirped grating fiber units are serially connected between the two optical couplers, respectively; wherein one port of the two chirped grating fiber units is respectively connected with two arms of one port of the first optical coupler, another port of the two chirped grating fiber units is respectively connected with two arms of one port of the second coupler, one arm of another port of the first coupler is connected with the optical signal input of the device, one arm of another port of the second coupler is connected with the optical signal output of the device, another arm of another port of the first coupler is connected with another arm of another port of the second coupler.

4. The device according to Claim 1, wherein the chirped grating fiber unit is consisted of two opposite portions of chirped grating fibers written on a fiber segment.

5. The device according to Claim 1, wherein the chirped grating fiber unit is consisted of two chirped grating fibers set oppositely and melted together as a whole.

6. The device according to Claim 1, wherein bandwidth of the chirped grating fiber unit is one wavelength or multiple wavelengths or tunable wavelengths.

7. The device according to Claim 2, wherein the chirped grating fiber unit is consisted of two opposite portions of chirped grating fibers written on a fiber segment.

8. The device according to Claim 2, wherein the chirped grating fiber unit is consisted of two chirped grating fibers set oppositely and melted together as a whole.

9. The device according to Claim 2, wherein bandwidth of the chirped grating fiber unit is one wavelength or multiple wavelengths or tunable wavelengths.

10. The device according to Claim 3, wherein the chirped grating fiber unit is consisted of two opposite portions of chirped grating fibers written on a fiber segment.

11. The device according to Claim 3, wherein the chirped grating fiber unit is consisted of two chirped grating fibers set oppositely and melted together as a whole.

12. The device according to Claim 3, wherein bandwidth of the chirped grating fiber unit is one wavelength or multiple wavelengths or tunable wavelengths.